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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,431	01/20/2004	Duane Arlyn Averill	ROC920030390US1	9190

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EXAMINER	
CHERY, MARDOCHEE	

ART UNIT	PAPER NUMBER
2188	

MAIL DATE	DELIVERY MODE
03/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/760,431	**Applicant(s)** AVERILL ET AL.	
	Examiner Mardochee Chery	**Art Unit** 2188	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 05 February 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

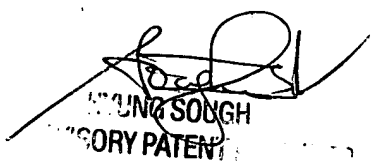
   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *1-22*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.



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Continuation of 11. does NOT place the application in condition for allowance because: 1. Applicants argue on page 12 of the remarks that "there is, at least, no disclosure in Baumgartner or Carpenter of a cache line state directory or portion thereof in which the entries have a one-to-one correspondence to cache lines".

Examiner respectfully disagrees and would like to point out that Arimilli rather is relied upon for such teaching, as shown in the Office action mailed on December 5, 2006. Examiner further posits that Arimilli clearly discloses such limitation in at least paragraph [0056] where "cache 132 including a cache directory 140, data storage 130, and a cache controller 156. Data storage 130 is implemented as a set associative array organized as a number of congruence classes each containing a plurality of cache lines. Cache directory 140, which records the contents of data storage 130 and associated state information includes a number of sets 142 that each correspond to a congruence class within data storage 130. Each set 142 contains a number of directory entries 144 for storing the address tag and coherency state of a corresponding cache line within the congruence class of data storage 130 with which the set 142 is associated (emphasis added)". Thus, it has been clearly shown that 1) Arimilli instead of Baumgartner and Carpenter is relied upon for teaching the feature of "a cache line state directory or portion thereof in which the entries have a one-to-one correspondence to cache lines", and 2) Arimilli discloses such feature verbatim in paragraph [0056]. As such, the claimed invention is not patentably distinct from the art of record.

2. Applicants further argue on page 12 that none of the cited art teaches that 1) "a portion of the cache line state directory has a fixed one-to-one mapping of entries with slots in the device cache", and 2) "a separate portion of the cache line state directory contains entries for the processor cache or caches, and some of these claims recite additionally that entries in the processor portion correspond to real addresses of data" as allegedly recited in all independent claims.

First of all Examiner would to point out that, with respect to the first point of arguments, that the limitation "a portion of the cache line state directory has a fixed one-to-one mapping of entries with slots in the device cache" is nowhere recited in the claims and that such imitation has no basis in the claims and Applicants should not read limitations of the specification into the claims to thereby narrow the scope of the claims by implicitly adding disclosed limitations which have no express basis in the claims.

Second of all, while Baumgartner clearly discloses "coherency directory 50 storing indications of the system memory addresses (real addresses) of data (e.g., cache lines); the address indication for each cache line is stored in association with an identifier of each remote processing node having a copy of the cache line; col.7, ll 59-65", Arimilli also discloses "request addresses including tag bits, index bits, and offset bits, where index bits of each request address received by cache 132 are input into cache directory 140, the index bits of the request address also select a set 142 within cache directory 140; a tag is stored within each entry 144 of the selected set 142. Thus, Arimilli, clearly discloses "a separate portion of the cache line state directory contains entries for the processor cache or caches, and entries in the processor portion correspond to real addresses of data".

3. Applicants argue on page 14, paragraph 1 of the remarks that "at least there is no disclosure of one-to-one correspondence between the entries of the local memory directory and entries in the caches of other processors or devices".

Examiner posits that Arimilli clearly discloses such limitation in at least paragraph [0056] where "cache 132 including a cache directory 140, data storage 130, and a cache controller 156. Data storage 130 is implemented as a set associative array organized as a number of congruence classes each containing a plurality of cache lines. Cache directory 140, which records the contents of data storage 130 and associated state information includes a number of sets 142 that each correspond to a congruence class within data storage 130. Each set 142 contains a number of directory entries 144 for storing the address tag and coherency state of a corresponding cache line within the congruence class of data storage 130 with which the set 142 is associated (emphasis added)". Thus, it has been clearly shown that Arimilli discloses such feature verbatim in paragraph [0056]. As such, the claimed invention is not patentably distinct from the art of record.

4. Applicants argue on page 14, paragraph 3 of the remarks that "the Examiner is using hindsight from applicants' specification to construct the claimed invention from known elements or features".

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

5. Applicants' mere allegations, on page 15, that the references teach away from applicants' invention does constitute in itself, or amount to a teaching away for it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the cited art of records, Baumgartner, Carpenter, and Arimilli, are without question, in the same field of applicants' endeavor. Namely, applicants' invention is directed to "design and operation of mechanisms for enforcing cache coherency in a digital data processing device having multiple caches (page 1), while Baumgartner's and Carpenters are directed to maintaining coherency in a NUMA system with multiple caches and multiple nodes (col. 2, ll 11-38), and Arimilli's is also directed to maintaining data coherency between nodes in a NUMA and other multiprocessing system (par. 0007).

In view of the foregoing and contrary to applicants' assumption, the cited art are indeed in the field of applicants' endeavor. Applicants' claimed invention is not patentably distinct over the cited art of record, and the combination of Baumgartner, Carpenter, and Arimilli teaches the invention as claimed.